WHAT IS CLAIMED I

1. A method for rendering an assembly of a first object and a
   second object on a user-interface of a device, the device
   being either of a first type or of a second type, the first
   and second objects presenting data of an application,
   the method comprising the following steps:
   receiving an application specification document by the
device, the application specification document having a
statement with an indication to render the first and second
objects in the assembly;
   interpreting the statement of the application specification
document to identify a presentation pattern for the assembly
from predefined first and second presentation patterns
according to the type of the device; and
   rendering the assembly of the first and second objects on
the user-interface according to the presentation pattern
identified in the interpreting step.

2. The method of claim 1, prior to the receiving step, further
   comprising:
   specifying the application in the application specification
document by a workbench in a development computer; and
   simulating the rendering step by a pre-viewer component of
the workbench.

3. The method of claim 1, wherein in the rendering step, the
   first object and the second objects are rendered according
   to the presentation pattern and to a predefined hierarchy
   pattern.

4. The method of claim 2, wherein the specifying step
   comprises:

3   writing the application in an application specification

4   language;

5   providing an interpreter specific for the application

6   specification language; and

7   storing the interpreter in the device.

1   5. The method of claim 4, further comprising:

2   storing the predefined presentation patterns by the

3   interpreter.

1   6. The method of claim 1, wherein the presentation pattern is

2   as a display pattern, wherein the objects are rendered to

3   the user-interface being a screen, and wherein the

4   presentation pattern is identified according to the size

5   (X) of the screen.

1   7. The method of claim 1, wherein in the rendering step, the

2   presentation pattern is an audio pattern.

1   8. A computer-program product to visually render a first

2   object and a second object in an assembly on screen of a

3   computing device, the objects presenting data of an

4   application on a computer that is at least temporarily

5   coupled to the computing device, the device being either of

6   a first type or of a second type, the computer-program

7   product having instructions that cause a processor of a

8   computing device to perform the following steps:

9   receiving an application specification document from the

10   computer, the application specification document having a

11   statement with an indication to render the first and second

12   objects in the assembly;

13   interpreting the statement of the application specification

14   document to identify a visual presentation pattern for the

15 assembly from predefined first and second visual presentation
16 patterns according to the type of the device; and
17   rendering the assembly of the first and second objects on
18 the screen according to the visual presentation pattern
19 identified in the interpreting step.

1 9. The computer-program product of claim 8 being an
2   interpreter located in the device.

1 10. The computer-program product of claim 8 being an
2   interpreter located in a further computer.

1 11. The computer-program product of claim 8 being embodied by
2   a program signal that is conveyed to the computing device.

1 12. The computer-program product of claim 8 being embodied by
2   a program carrier.

1 13. A computer-program product that resides in a computing
2   device of either a first type or a second type, the
3   computer-program product for interpreting an application
4   specification document and causing a processor of the
5   computing device to render a first object and a second
6   object in combination to a user-interface of the device,
7   the computer-program product having a plurality of
8   instructions to control the processo , the computer-program
9   product characterized in that
10 a first sub-plurality of instructions form a theme-handler
11 to evaluate a statement of the application specification
12 document, the statement instructing to render the first and
13 second objects in an assembly according to a device type
14 specific presentation pattern for the assembly that is
15 identified from predefined first and second visual
16 presentation patterns; and

17   a second sub-plurality of instructions form a navigation

18   engine to select one of the first and second objects for

19   interaction with a user to create inter-object relations with

20   user-interface elements and data cursors.

1   14. The computer-program product of claim 13 being delivered

2   to the device by a program signal.

1   15. The computer-program product of claim 13 being delivered

2   to the device by a program carrier.

1   16. A method to create an application system operating with a

2   computing device, the method comprises the following steps:

3   a first step to define a user-interface model;

4   a second step to define an application specification

5   document by a meta-language;

6   a third step to customize a workbench component that

7   identifies constraints on the validity of the application

8   specification document;

9   a fourth step to define layout themes for the computing

10   device;

11   a fifth step to realize the user-interface model in an

12   interpreter component; and

13   a sixth step to realize the layout-themes in the

14   interpreter component.

1   17. The method of claim 16 wherein the first step comprises:

2   determining the types of tiles and the functionality of

3   tiles, the tiles being elements of the user-interface model;

4   determining relationships between the tiles in an assembly;

5   and

6   determining a navigation state and the required user

7   operations on the navigation state.

1   18.   The method of claim 17 wherein the second step comprises:
2   defining specifications to the types of tiles;
3   defining attributes to express properties of the tiles; and
4   defining attributes in the navigation state.

1   19.   The method of claim 18 wherein the fourth step for each
2   computing device comprises:
3   defining a representation on the output media of device for
4   each element of the user-interface model; and
5   defining the user-interface model for each operation of the
6   user-interface model.

1   20.   The method of claim 19 wherein the fifth step comprises:
2   creating models to specify the tiles and the assembly;
3   implementing constructors to create user-interface
4   instances from the application specification document; and
5   implementing the user-interface instances from the models
6   in a computer programming language.

1   21.   The method of claim 20 wherein the sixth step comprises:
2   implementing each layout-theme as a layout handler; and
3   obtaining a selection of the layout-theme by a developer
4   and forwarding the selection to the interpreter
5   component.